

VIRGINIA DROUGHT MONITORING TASK FORCE

Drought Status Report

August 9, 2010

The Virginia Drought Monitoring Task Force (DMTF) held a conference call to discuss existing conditions on August 3, 2010. As a result of continued agricultural impacts and the potential for expansion of impacts to other sectors if dry conditions continue, the DMTF recommends that the Drought Watch issued by the Virginia Department of Environmental Quality (DEQ) be maintained through at least the end of August. Due primarily to the stability of public water supplies, the DMTF does not recommend issuing a Drought Warning for any areas of the Commonwealth at this time. The DMTF recommendation is based on the following information.

Despite rain events in many regions during the last three weeks, including some significant rain events the first week of August, significant short-term precipitation deficits (30 and 60 day) remain across the majority of the Commonwealth (Appendix A). Appendix A contains precipitation tables for periods dating from July 1, 2009 through August 6, 2010 provided by the Virginia Climatology Office. Precipitation deficits are most severe (<65% of normal) for the June through August period in the Chowan, York-James, Middle James and Northern Coastal Plain drought evaluation regions. The June through July period was in the top 3 driest and warmest on record. Longer-term precipitation, October 1, 2009 through August 6, 2010, is normal to above normal for all of Virginia. The US Drought Monitor that indicates “abnormally dry, D0” to “severe drought, D2” conditions exist in approximately 87% of the Commonwealth (Appendices B and C). The portion categorized as “severe drought, D2” has continued to increase over the last three weeks to cover approximately 34% of the Commonwealth. This area extends from south-central border with North Carolina, through central Virginia and the northern coastal plain, to northwestern Virginia. The Seasonal Drought Outlook for the United States from now through October 2010 forecasts an improvement in the drought conditions in southern Virginia and ongoing drought with some improvement for central through northern Virginia (Appendix D).

The National Weather Service (NWS) Climate Prediction Center 6-10 day and 8-14 climatologic outlooks call for above normal precipitation and normal temperatures for the entire Commonwealth. NWS staff indicates that the pattern still is not showing any widespread rain systems but several cold fronts that will be accompanied by thunderstorms which should give some areas significant rainfall. Temperatures will not be as hot as earlier in July but still averaging near normal to above normal. The one month and three month outlooks call for above normal temperatures and for equal chances of below normal, normal and above normal precipitation for the entire Commonwealth. However, the Virginia Climatology Office reports that with the high point of hurricane season upon us, the likelihood of receiving significant moisture across a large portion of the Commonwealth from tropical systems and their remnants is increasing.

Streamflow has responded positively to rain events in early August, resulting in improved conditions at many stream gages across Virginia (Appendices E and F). However, when looking at longer-term statistics, 14-day and 28-day, the majority of the Commonwealth’s stream gages are below normal. The driest portions of the Commonwealth analyzed by hydrologic units are the southeast and central regions. Because of the wet winter and spring, groundwater levels are recording water levels in the normal range at 11 of Virginia’s 20 monitoring locations. Groundwater levels are below normal at the remaining monitoring locations (Appendix G). Release of the groundwater storage is the primary source for maintaining streamflow. Releases of groundwater to streams will continue to decline through August and into September.

Generally, water supply systems across the Commonwealth are stable and levels in large reservoirs are in normal ranges. However, between July 28th and August 6th two additional utilities issued voluntary water conservation measures bringing the total number of utilities under voluntary restrictions to 22, 20 voluntary and 2 mandatory. The additional utilities with voluntary measures are the Town of Smithfield and James City

Service Authority Central System. Both utilities are responding to a significant rise in demand. The most recent Virginia Department of Health restrictions report is included as Appendix H. This does not include the two localities discussed here.

The most significant impacts of the dry conditions remain in agricultural production. The agricultural situation has not changed significantly since the July 28, 2010 *Drought Status Summary Report*. A total of 15 Virginia localities have formally requested the Governor's assistance in obtaining federal agricultural disaster designation due to drought conditions. The Virginia Department of Agriculture and Consumer Services (VDACS) and the USDA/Farm Service Agency (FSA) anticipate additional localities will request assistance in the coming weeks. The area of the Commonwealth with the most requests for disaster designation is the Northern Neck and Middle Peninsula.

Weather conditions remain critical for crops in many areas, especially Eastern Virginia. Corn growers with crop insurance have adjusters in their fields and corn will soon be cut for silage if the grower has livestock. Soybeans in many fields are dead; especially double crop beans, which were planted later in the season. Cotton is stressed and the fruit is falling off. With some immediate rainfall, the cotton crop is salvageable, but yields will definitely be reduced. Peanuts look good on top of the ground but spider mites are attacking the plants. Peanut yields will be greatly reduced as the plants struggle to grow and produce pegs due to lack of moisture.

The dry weather is also a major concern for livestock. The agricultural drought situation in most parts of the state has reached critical proportions. Many producers are feeding hay with an extremely short hay supply while others are purchasing hay out of Pennsylvania. Cattle movement has begun to increase. We will continue to see larger numbers of feeder cattle and cows brought to market over the next several weeks as these dry conditions continue. Several locations are making plans to add additional special sales.

The Virginia Department of Forestry (VDOF) reports that the persisting drought conditions continue to increase the potential for wildfires throughout much of the Commonwealth. For the month of July 2010, the VDOF responded to 119 wildfires which burned 549 acres. This is roughly 4 times the normal average for the month. The VDOF Cumulative Severity Index (CSI) which equates to the more common Keetch-Byram Drought Index (KBDI) is approaching historical records for this time of the year. Looking ahead, the hot, dry conditions that the Commonwealth has experienced this summer are expected to continue into the fall. Should this hold true, the normal fall wildfire season could be significant, although things can change quickly with just a little bit of precipitation.

The Department of Game and Inland Fisheries reports that all boat access sites across the state are open and there have not been significant impacts to trout hatchery operations.

Reports from the Climatology Office of the University of Virginia, the Virginia Department of Environmental Quality, and the Virginia Department of Forestry, follow.

Report of the Climatology Office of the University of Virginia

Most any rainfall received throughout the Commonwealth during July and August was the result of thunderstorm activity. The thunderstorms tended to be widely scattered, but some larger scale outbreaks covered larger areas. In either case, the rainfall totals were highly variable, with one location becoming inundated while a nearby spot remained virtually untouched.

Nonetheless, when averaged over a given drought region, the effect of these thunderstorms has been to start August off with a substantial moisture input. Only the York-James Region failed to reach normal for the first week in August and the statewide average was 180% of normal.

Rainfall for July, however, was below across all regions, five of which didn't receive more than about 50% of normal. Only parts of the Shenandoah Valley and Northern Virginia reached the 85% level. In addition, the high temperatures for July led to increased rates of evapotranspiration, causing even more moisture loss than the already high rates of a typical summer. Averaged across the state, the temperature for the June through July period is the highest seen in Virginia in at least 116 years.

With the high point of the hurricane season upon us, the likelihood of receiving significant moisture across a large portion of the Commonwealth from tropical systems and their remnants is increasing. This hurricane season is forecast to be an active one; but, so far, only three storms have been named. Recently, though, the tropics have shown signs of increased activity, suggesting that the forecasts could indeed prove correct.

Virginia Department of Environmental Quality Conditions of Major Reservoirs

Levels of large reservoirs statewide are within normal ranges but have generally been declining since June. Four large multi-purpose reservoirs are identified as drought indicators in the *Virginia Drought Assessment and Response Plan* (Plan); Smith Mountain Lake, Lake Moomaw, Lake Anna and Kerr Reservoir. All four of these reservoirs are at levels above any defined drought status. Below is a summary of large reservoir conditions:

- Lake Moomaw on the Jackson River has declined at a rate of approximately 0.15- 0.20 ft per day throughout July and early August. Approximately 65% of conservation storage remains. Lake Moomaw is 8 ft above the Drought Watch level.
- Kerr Reservoir is currently approximately 1.4 ft below the Guide Curve and is anticipated to drop approximately 0.6 ft over the next seven days. Drought Watch status is reached at greater than 3 ft below the Guide Curve.
- Smith Mountain Lake is currently at elevation 793.6 ft which is 1.4 ft below full pond. The Drought Watch stage for Smith Mountain Lake is elevation 793 feet and below.
- Lake Anna is currently at elevation 249.3 feet (0.7 feet below full). The Drought Watch stage for Lake Anna Lake is elevation 248 feet and below.

Virginia Department of Forestry

The persisting drought conditions continue to increase the potential for wildfires throughout much of the Commonwealth. Although isolated thunderstorm activity resulted in measurable rainfall in many areas of the state over the last few weeks, in most cases the hotter than average temperatures have mitigated the effects of this precipitation. Looking ahead, the hot, dry conditions that the Commonwealth has experienced this summer are expected to continue into the fall. Should this hold true, the normal fall wildfire season could be significant, although things can change quickly with just a little bit of precipitation.

For the month of July 2010, the DOF responded to 119 wildfires which burned 549 acres. This is roughly 4 times the normal average for the month. The DOF's Cumulative Severity Index (CSI) which equates to the more common Keetch-Byram Drought Index (KBDI) is approaching historical records for this time of the year. DOF offices are now recording values between 420 and 680, on a scale of 0 – 800, with 800 being extreme drought. Lower readings are mostly isolated in Southwestern VA, with the highest reading occurring

in the Shenandoah Valley and in the Eastern parts of the Commonwealth. As a reference, the current CSI values are running about 300 points higher across the board than what was recorded during the same period last year.

APPENDIX A

Precipitation Departures by Drought Evaluation Region

PRELIMINARY PRECIPITATION SUMMARY

Prepared:

08/06/10

DROUGHT REGION	OBSERVED	Aug 1, 2010 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1 Big Sandy	1.55	0.74	0.81	209%
2 New River	0.98	0.64	0.34	153%
3 Roanoke	1.52	0.72	0.80	212%
4 Upper James	1.37	0.64	0.73	213%
5 Middle James	1.31	0.74	0.57	178%
6 Shenandoah	1.13	0.64	0.48	175%
7 Northern Virginia	1.00	0.75	0.25	134%
8 Northern Piedmont	1.56	0.74	0.82	210%
9 Chowan	1.50	0.83	0.67	180%
10 Northern Coastal Plain	1.38	0.75	0.64	185%
11 York-James	0.80	0.94	-0.14	85%
12 Southeast Virginia	1.02	0.99	0.03	103%
13 Eastern Shore	1.70	0.75	0.95	227%
Statewide	1.34	0.74	0.60	180%

DROUGHT REGION	OBSERVED	Jul 1, 2010 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1 Big Sandy	5.28	5.22	0.06	101%
2 New River	3.83	4.43	-0.60	86%
3 Roanoke	4.78	5.11	-0.33	94%
4 Upper James	5.03	4.68	0.34	107%
5 Middle James	3.18	5.15	-1.97	62%
6 Shenandoah	4.51	4.40	0.10	102%
7 Northern Virginia	4.46	4.52	-0.06	99%
8 Northern Piedmont	3.88	5.14	-1.26	76%
9 Chowan	3.19	5.34	-2.15	60%
10 Northern Coastal Plain	2.85	5.20	-2.35	55%
11 York-James	4.17	6.04	-1.87	69%
12 Southeast Virginia	4.75	6.06	-1.31	78%
13 Eastern Shore	3.78	4.75	-0.97	80%
Statewide	4.11	5.08	-0.97	81%

DROUGHT REGION	OBSERVED	Jun 1, 2010 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1 Big Sandy	10.06	9.36	0.70	107%
2 New River	6.39	8.28	-1.89	77%
3 Roanoke	6.87	9.00	-2.13	76%
4 Upper James	6.88	8.39	-1.51	82%
5 Middle James	5.05	8.66	-3.61	58%
6 Shenandoah	6.34	8.11	-1.78	78%
7 Northern Virginia	5.80	8.38	-2.57	69%
8 Northern Piedmont	6.29	9.15	-2.86	69%

9	Chowan	5.71	8.99	-3.28	64%
10	Northern Coastal Plain	4.86	8.76	-3.90	55%
11	York-James	5.10	9.45	-4.35	54%
12	Southeast Virginia	7.98	9.67	-1.69	83%
13	Eastern Shore	5.31	7.73	-2.42	69%
	Statewide	6.48	8.87	-2.39	73%

	DROUGHT REGION	OBSERVED	May 1, 2010 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	15.51	14.18	1.33	109%
2	New River	10.21	12.49	-2.28	82%
3	Roanoke	11.51	13.33	-1.82	86%
4	Upper James	10.69	12.67	-1.99	84%
5	Middle James	9.10	12.90	-3.80	71%
6	Shenandoah	9.39	11.95	-2.56	79%
7	Northern Virginia	10.44	12.72	-2.27	82%
8	Northern Piedmont	9.96	13.37	-3.41	75%
9	Chowan	11.13	13.08	-1.95	85%
10	Northern Coastal Plain	7.25	12.92	-5.67	56%
11	York-James	10.00	13.72	-3.73	73%
12	Southeast Virginia	12.19	13.53	-1.35	90%
13	Eastern Shore	7.42	11.25	-3.83	66%
	Statewide	10.64	13.13	-2.49	81%

	DROUGHT REGION	OBSERVED	Apr 1, 2010 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	18.19	17.94	0.25	101%
2	New River	12.05	16.04	-3.99	75%
3	Roanoke	13.27	17.13	-3.86	77%
4	Upper James	12.39	16.07	-3.69	77%
5	Middle James	10.85	16.24	-5.39	67%
6	Shenandoah	10.75	14.87	-4.13	72%
7	Northern Virginia	12.04	16.02	-3.98	75%
8	Northern Piedmont	11.49	16.66	-5.16	69%
9	Chowan	12.57	16.51	-3.94	76%
10	Northern Coastal Plain	8.85	16.01	-7.16	55%
11	York-James	10.95	17.02	-6.08	64%
12	Southeast Virginia	13.38	16.78	-3.41	80%
13	Eastern Shore	8.61	14.17	-5.56	61%
	Statewide	12.36	16.55	-4.19	75%

	DROUGHT REGION	OBSERVED	Mar 1, 2010 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	21.07	22.19	-1.12	95%
2	New River	16.12	19.71	-3.59	82%
3	Roanoke	18.40	21.40	-3.00	86%
4	Upper James	16.49	19.86	-3.38	83%
5	Middle James	15.99	20.30	-4.31	79%
6	Shenandoah	15.46	18.07	-2.61	86%
7	Northern Virginia	15.78	19.68	-3.90	80%
8	Northern Piedmont	16.42	20.47	-4.05	80%

9	Chowan	17.16	20.88	-3.73	82%
10	Northern Coastal Plain	14.99	20.29	-5.29	74%
11	York-James	16.56	21.71	-5.15	76%
12	Southeast Virginia	19.68	20.98	-1.30	94%
13	Eastern Shore	14.84	18.48	-3.64	80%
	Statewide	17.05	20.59	-3.54	83%

	DROUGHT REGION	OBSERVED	Feb 1, 2010 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	23.84	25.77	-1.93	93%
2	New River	18.54	22.64	-4.10	82%
3	Roanoke	21.06	24.71	-3.65	85%
4	Upper James	18.81	22.71	-3.90	83%
5	Middle James	19.21	23.42	-4.21	82%
6	Shenandoah	18.34	20.48	-2.14	90%
7	Northern Virginia	19.82	22.35	-2.52	89%
8	Northern Piedmont	18.94	23.44	-4.50	81%
9	Chowan	20.41	24.05	-3.65	85%
10	Northern Coastal Plain	18.29	23.43	-5.14	78%
11	York-James	20.25	25.24	-4.99	80%
12	Southeast Virginia	23.43	24.48	-1.05	96%
13	Eastern Shore	18.72	21.67	-2.95	86%
	Statewide	20.03	23.72	-3.70	84%

	DROUGHT REGION	OBSERVED	Jan 1, 2010 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	28.07	29.50	-1.43	95%
2	New River	23.04	25.85	-2.81	89%
3	Roanoke	26.13	28.63	-2.50	91%
4	Upper James	23.13	25.99	-2.86	89%
5	Middle James	23.60	27.08	-3.48	87%
6	Shenandoah	22.15	23.33	-1.18	95%
7	Northern Virginia	22.52	25.63	-3.10	88%
8	Northern Piedmont	22.87	26.96	-4.09	85%
9	Chowan	24.43	28.16	-3.74	87%
10	Northern Coastal Plain	21.99	27.18	-5.18	81%
11	York-James	24.68	29.38	-4.70	84%
12	Southeast Virginia	27.75	28.64	-0.89	97%
13	Eastern Shore	21.74	25.23	-3.49	86%
	Statewide	24.23	27.36	-3.13	89%

	DROUGHT REGION	OBSERVED	Dec 1, 2009 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	33.76	33.14	0.62	102%
2	New River	30.34	28.56	1.77	106%
3	Roanoke	33.70	31.88	1.82	106%
4	Upper James	30.52	28.94	1.57	105%
5	Middle James	31.75	30.25	1.50	105%
6	Shenandoah	27.40	25.92	1.47	106%
7	Northern Virginia	28.77	28.73	0.05	100%
8	Northern Piedmont	29.36	30.24	-0.88	97%

9	Chowan	32.37	31.18	1.18	104%
10	Northern Coastal Plain	29.90	30.46	-0.56	98%
11	York-James	31.63	32.77	-1.14	97%
12	Southeast Virginia	35.56	31.82	3.74	112%
13	Eastern Shore	30.26	28.47	1.79	106%
	Statewide	31.37	30.48	0.89	103%

	DROUGHT REGION	OBSERVED	Nov 1, 2009 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	36.01	36.42	-0.41	99%
2	New River	35.33	31.59	3.74	112%
3	Roanoke	41.88	35.24	6.64	119%
4	Upper James	35.41	32.30	3.10	110%
5	Middle James	40.32	33.76	6.56	119%
6	Shenandoah	31.25	28.97	2.28	108%
7	Northern Virginia	32.71	32.14	0.57	102%
8	Northern Piedmont	35.42	34.04	1.38	104%
9	Chowan	42.01	34.29	7.72	122%
10	Northern Coastal Plain	38.65	33.60	5.05	115%
11	York-James	40.89	36.14	4.74	113%
12	Southeast Virginia	45.95	34.89	11.06	132%
13	Eastern Shore	37.82	31.41	6.41	120%
	Statewide	38.01	33.71	4.30	113%

	DROUGHT REGION	OBSERVED	Oct 1, 2009 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	39.05	39.30	-0.25	99%
2	New River	38.02	34.76	3.26	109%
3	Roanoke	44.44	38.95	5.49	114%
4	Upper James	38.20	35.55	2.64	107%
5	Middle James	43.38	37.60	5.78	115%
6	Shenandoah	34.00	32.16	1.84	106%
7	Northern Virginia	37.52	35.62	1.90	105%
8	Northern Piedmont	38.84	38.03	0.81	102%
9	Chowan	44.06	37.87	6.18	116%
10	Northern Coastal Plain	42.87	37.11	5.76	116%
11	York-James	43.98	39.67	4.30	111%
12	Southeast Virginia	48.26	38.55	9.70	125%
13	Eastern Shore	42.19	34.62	7.57	122%
	Statewide	41.01	37.21	3.80	110%

	DROUGHT REGION	OBSERVED	Sep 1, 2009 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	44.24	42.76	1.48	103%
2	New River	42.04	38.17	3.87	110%
3	Roanoke	47.50	43.18	4.32	110%
4	Upper James	41.47	39.05	2.41	106%
5	Middle James	46.55	41.73	4.82	112%
6	Shenandoah	36.22	35.83	0.38	101%
7	Northern Virginia	39.76	39.69	0.08	100%
8	Northern Piedmont	41.73	42.31	-0.58	99%

9	Chowan	48.37	42.30	6.07	114%
10	Northern Coastal Plain	45.94	41.20	4.75	112%
11	York-James	49.89	44.57	5.32	112%
12	Southeast Virginia	55.56	42.98	12.58	129%
13	Eastern Shore	48.66	38.23	10.43	127%
	Statewide	44.65	41.21	3.44	108%

	DROUGHT REGION	OBSERVED	Aug 1, 2009 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	48.73	46.59	2.14	105%
2	New River	46.55	41.48	5.07	112%
3	Roanoke	51.84	46.90	4.94	111%
4	Upper James	44.85	42.38	2.46	106%
5	Middle James	50.07	45.55	4.52	110%
6	Shenandoah	39.26	39.16	0.10	100%
7	Northern Virginia	43.73	43.54	0.20	100%
8	Northern Piedmont	44.87	46.13	-1.26	97%
9	Chowan	52.21	46.61	5.60	112%
10	Northern Coastal Plain	51.20	45.06	6.14	114%
11	York-James	55.36	49.44	5.92	112%
12	Southeast Virginia	65.01	48.10	16.91	135%
13	Eastern Shore	53.26	42.10	11.16	127%
	Statewide	48.83	45.04	3.79	108%

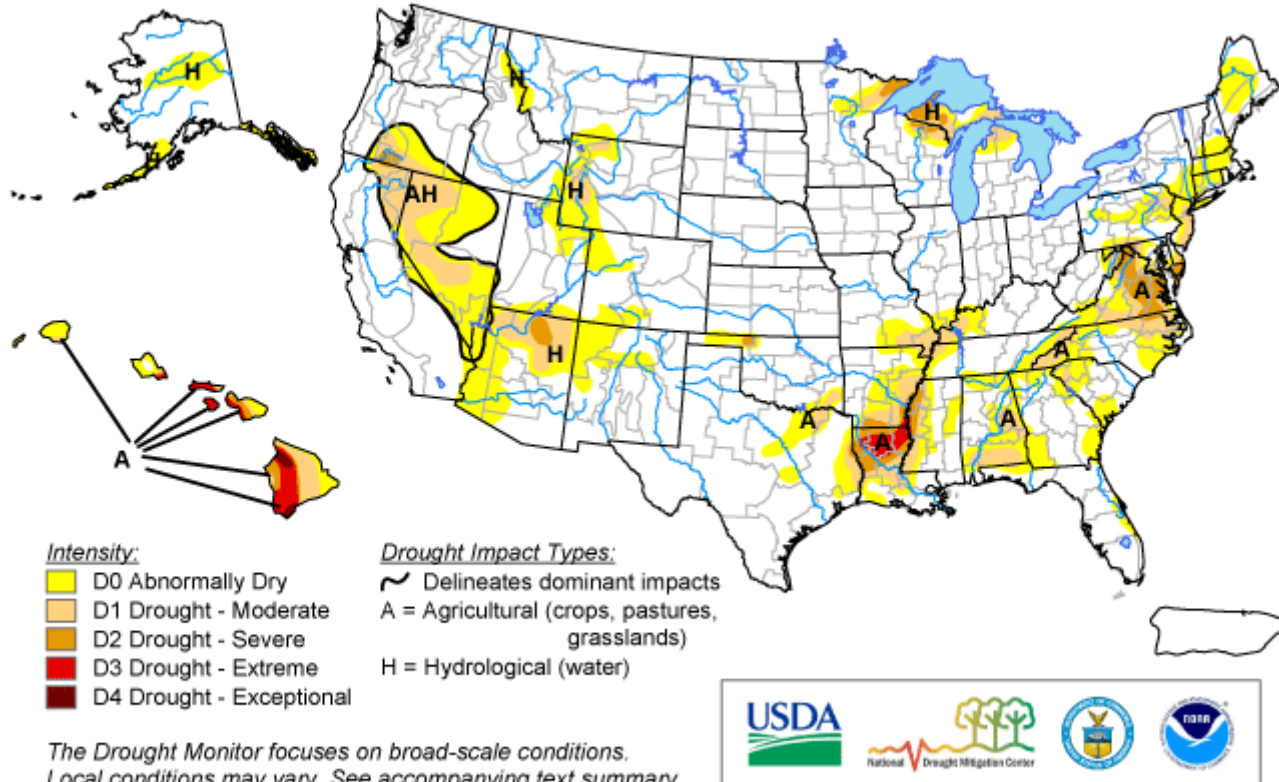
	DROUGHT REGION	OBSERVED	Jul 1, 2009 NORMAL	- Aug 6, 2010 DEPARTURE	% OF NORM.
1	Big Sandy	54.33	51.07	3.26	106%
2	New River	50.61	45.27	5.34	112%
3	Roanoke	56.19	51.29	4.90	110%
4	Upper James	49.74	46.42	3.32	107%
5	Middle James	53.56	49.96	3.60	107%
6	Shenandoah	42.20	42.92	-0.72	98%
7	Northern Virginia	45.38	47.31	-1.92	96%
8	Northern Piedmont	47.80	50.53	-2.73	95%
9	Chowan	56.23	51.12	5.11	110%
10	Northern Coastal Plain	56.07	49.51	6.56	113%
11	York-James	61.34	54.54	6.80	112%
12	Southeast Virginia	68.99	53.17	15.82	130%
13	Eastern Shore	59.04	46.10	12.94	128%
	Statewide	52.88	49.38	3.50	107%

APPENDIX B

U.S. Drought Monitor

August 3, 2010

Valid 8 a.m. EDT



Released Thursday, August 5, 2010
Author: David Miskus, CPC/NCEP/NWS/NOAA

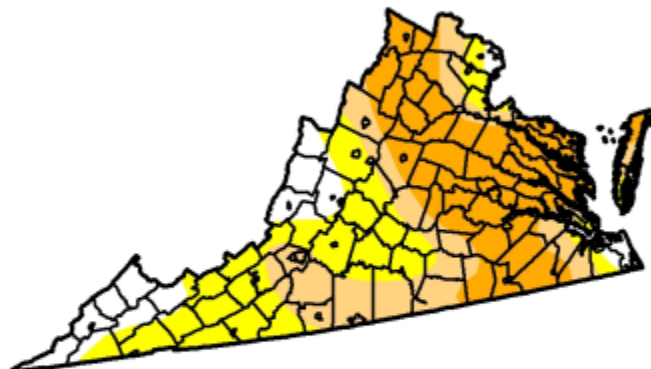
APPENDIX C

U.S. Drought Monitor Virginia

August 3, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	13.5	86.5	57.6	34.3	0.0	0.0
Last Week (07/27/2010 map)	3.4	96.6	75.2	14.8	0.0	0.0
3 Months Ago (05/11/2010 map)	68.6	31.4	0.0	0.0	0.0	0.0
Start of Calendar Year (01/05/2010 map)	100.0	0.0	0.0	0.0	0.0	0.0
Start of Water Year (10/06/2009 map)	86.9	13.1	0.4	0.0	0.0	0.0
One Year Ago (08/04/2009 map)	83.1	16.9	0.0	0.0	0.0	0.0



Intensity:

 D0 Abnormally Dry	 D3 Drought - Extreme
 D1 Drought - Moderate	 D4 Drought - Exceptional
 D2 Drought - Severe	

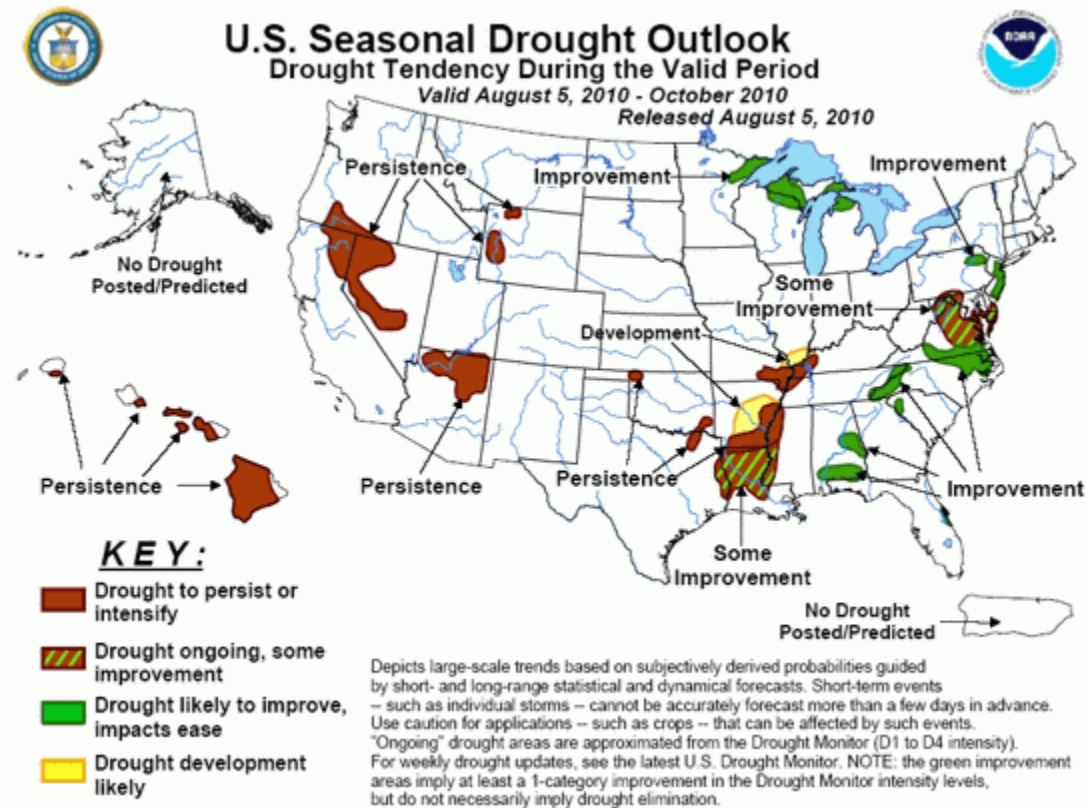
The Drought Monitor focuses on broad-scale conditions.
Local conditions may vary. See accompanying text summary
for forecast statements

<http://drought.unl.edu/dm>



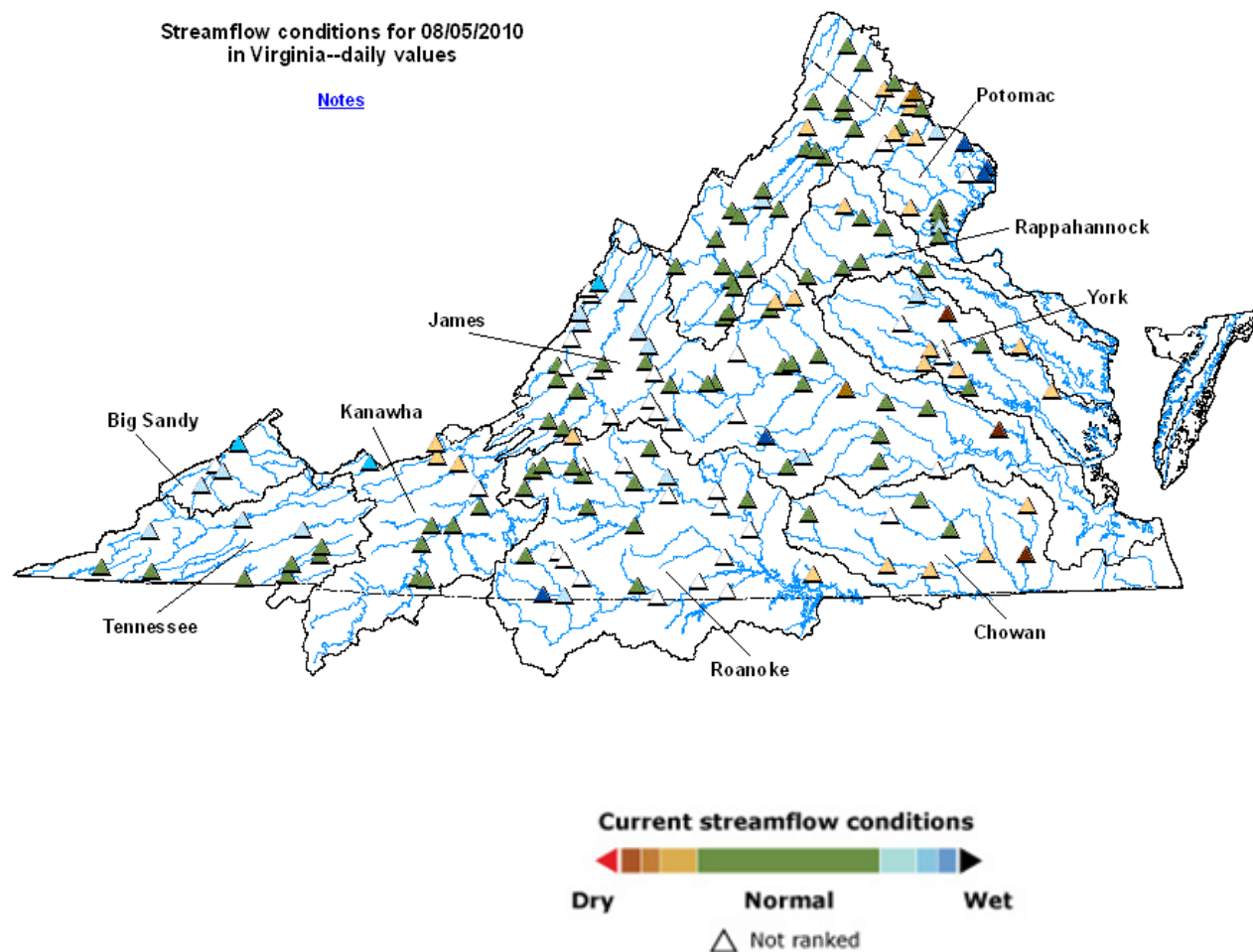
Released Thursday, August 5, 2010
Author: D. Miskus, CPC/NOAA

APPENDIX D



APPENDIX E

USGS Streamflow Conditions for August 5, 2010

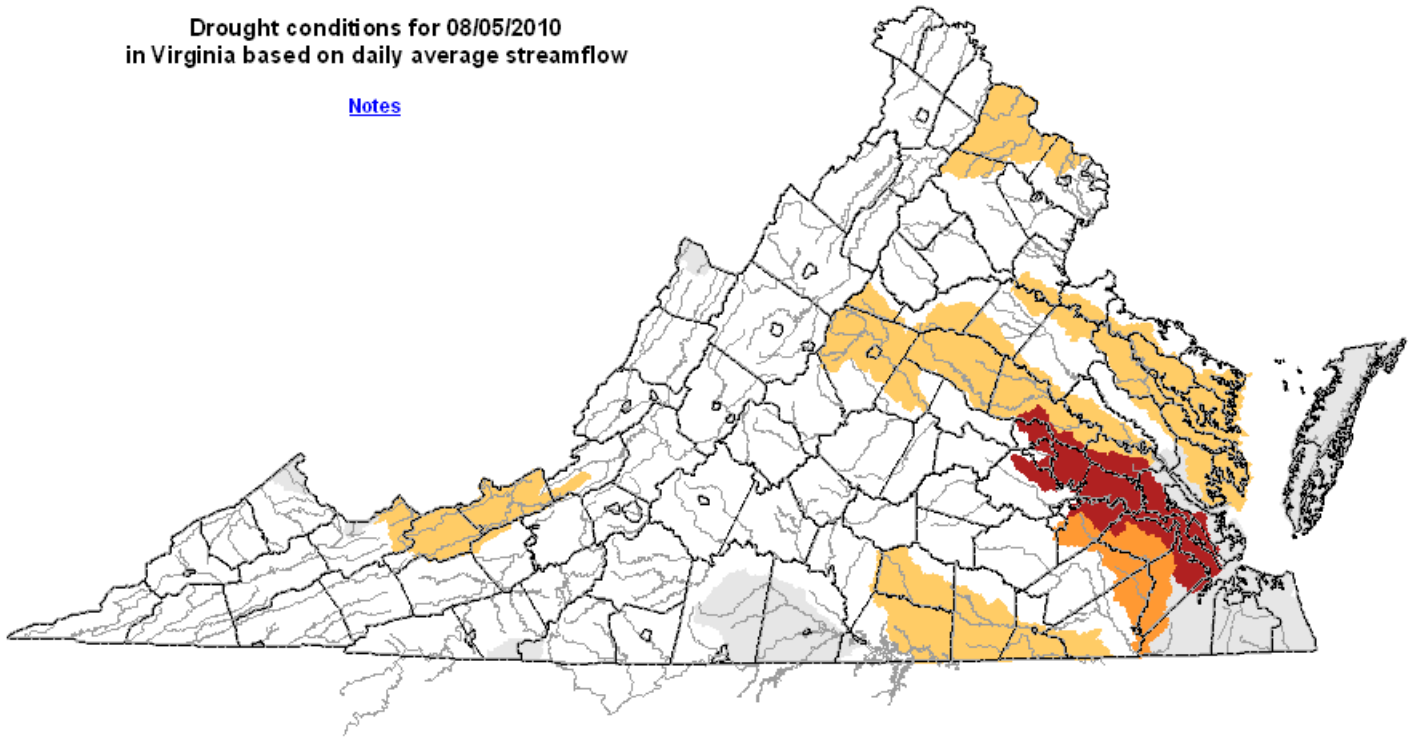


APPENDIX F

Drought Watch -- USGS State Information on Drought Map of below normal daily average streamflow

Drought conditions for 08/05/2010
in Virginia based on daily average streamflow

[Notes](#)



EXPLANATION - Percentile classes				
Low	<=5	6-9	10-24	Insufficient data
Extreme drought	Severe drought	Moderate drought	Below normal	

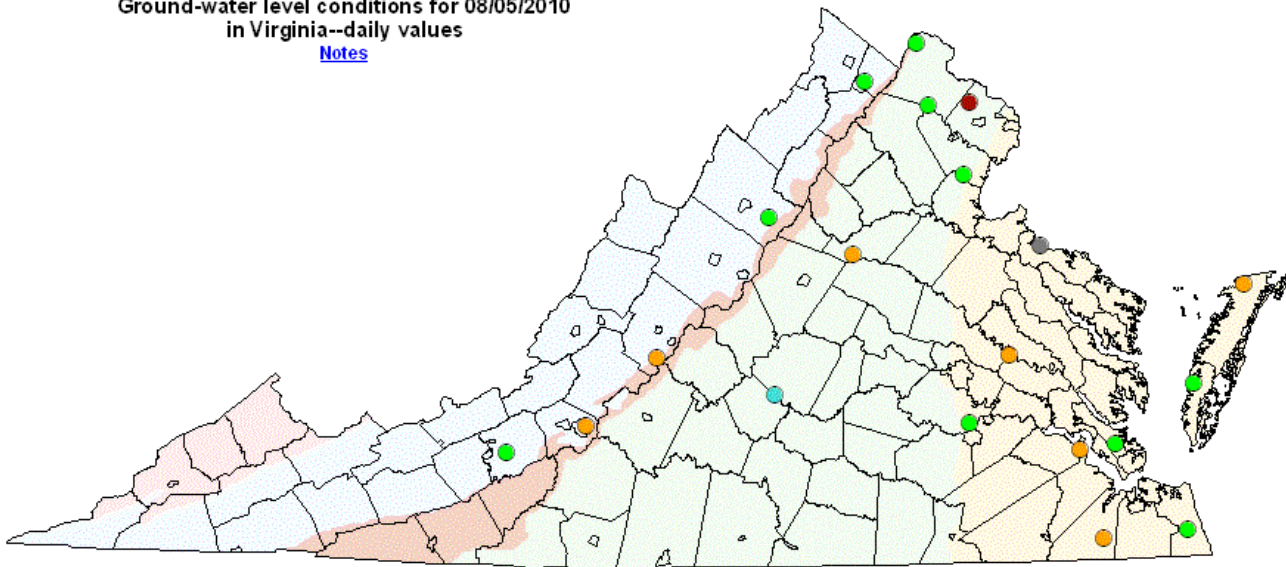
APPENDIX G

Virginia Climate Response Network

August 5, 2010

Ground-water level conditions for 08/05/2010
in Virginia--daily values

[Notes](#)



Explanation - Percentile classes (symbol color based on most recent daily value.)									
New	<5	5-10	10-24	25-75	76-90	90-95	>95	New	Not
Low	Well Below Normal		Below Normal	Normal	Above Normal	Well Above Normal		High	Ranked

APPENDIX H

Condition of Public Water Supplies

July 21, 2010

ODW Drought Situation Report

Date: **7/21/10**

	Restriction totals
Mandatory	2
Voluntary	18
Total	20

N-None
M-Mandatory
V-Voluntary

B-Better
S-Stable/Same
W-Worse

PWSID	Waterworks	Source Name	Restrictions	Situation	Population Served
3053280	DCWA Central (Dinwiddie County)	Appomattox River Water Authority (ARWA)	V	S - 07/14/2010 - Voluntary restrictions as of 7/12/2010.	6,800
3081550	GCWSA - Jarratt	Nottoway River	N	S - 07/19/10 - Waterworks production rate reduced due to lower demand; river level sufficient to allow plant operation at 1.9 mgd. Chief operator noted that river is getting low.	7,190
3093120	Isle of Wight County	Suffolk	V	W - 07/15/10 - Obtains water from Suffolk. Follows Suffolk's lead on conservation.	1,284
3149700	Puddledock Road	ARWA	V	W - 07/15/2010 - Voluntary restrictions as of 7/12/2010.	9,723
3550050	Chesapeake - Western Branch system	City of Portsmouth	V	S -07/15/2010 This portion of the city is consecutive to (receives water from) the city of Portsmouth. City Council voted to go to voluntary conservation city-wide - it took effect on 24 Oct 2007. Still following Portsmouth's lead on conservation.	36,642
3550051	Chesapeake	Northwest River, City of Norfolk Raw Water (Lake Gaston)	N	S -07/15/2010 Through the first 6 months surplus rainfall for 2010 is 10.73 inches. There are no water restrictions in Chesapeake. Chlorides remain low between 30-40 mg/l. Continuing to purchase raw water from Norfolk (7.4 MGD average). The Intown Lakes	103,504

				remain full and there are no irregularities in the tidal patterns in NWR.	
3550052	Chesapeake - South Norfolk system	City of Norfolk	V	S -07/15/2010-This portion of the city is consecutive to (receives water from) the city of Norfolk. City Council voted to go to voluntary conservation city-wide - it took effect on 24 Oct 2007. Still following Norfolk's lead on conservation.	38,709
3570150	Colonial Heights	ARWA	V	S - 07/14/10 - Voluntary restrictions currently in place. Generally follow ARWA recommendations on water restrictions.	17,286
3595250	Emporia	Meherrin River	N	S - 07/19/10 - Reservoir level sufficient for normal operation. Power plant & ILUKA also withdrawing from river.	5,600
3670800	Virginia-American Water Company (Hopewell)	Appomattox & James Rivers	N	S - 07/19/2010 - Level at intakes normal and sufficient to supply plant. July rainfall thus far below monthly average and year-to-date totals slightly below average. Still experiencing taste and odor issues and adjusting treatment.	28000 - Primary / 45463 Total including Consecutive System (Ft. Lee)
3700500	Newport News	Chickahomony River, Skiffs Creek, Diascand, Little Creek, Harwoods Mill, Lee Hall	N	7/20/10 - Total reservoir capacity at 83%. Chickahominy pumps secured since June 20th. (MIF/chlorides). At current delivery rate of about 50 MGD, there is about 189 days of stored water available.	414,000
3710100	Norfolk	Lake Prince, Lake Burnt Mills, Western Branch reservoir, Nottoway River, Blackwater River, 4 western wells; Little Creek reservoir, Lakes Smith, Lawson, Whitehurst, and Wright. Lake Gaston.	V	W - As of 07/19/10, reservoirs at 85.8% (down from 91.5% on 06/28/10). Historic reservoir capacity is 88.1% at this time of year. Avg. pumping from Lake Gaston = 50.2 MGD. Total Reservoir Storage = 13,048 MG. Approx. 650 days of storage remaining under current demand with 50 MGD pumping from Lake Gaston, and approx. 190 days of storage remaining under current demand with no pumping from Lake Gaston. Called for voluntary conservation 11/1/07.	261,250 - Primary / 755,617 - Total including consecutive systems (Va Beach + military bases).
3730750	Petersburg	ARWA	V	W - 07/14/10 - Voluntary restrictions requested 7/12/2010. Generally follow ARWA recommendations on	33,740

				water restrictions.	
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	V	W - As of 07/16/10, reservoirs at 83% (down from 90% on 07/02/10). Median reservoir capacity is 94% for the month and historical average capacity is 92% (period of 1969-2008). The emergency wells are off. Estimated days of storage remaining at current pumpage and rainfall is 186 days (avg. pumpage is 16.7 MGD). Called for voluntary conservation on 10/10/07.	100,400 - Primary / 120,400 Total including consecutive systems (military bases)
3800805	Suffolk	Lone Star Lakes, Cumps Mill Pond	V	W -7/15/2010-Will follow Portsmouth's lead and the region as far as conservation. Average reservoir levels : Southern Lakes at 82.5% capacity, for the Northern Lakes at 75.29% and Crumps Mill Pond at 83.39%. The Southern Lakes are for emergency use only. Overall they are at 81.09% capacity as of June 30, 2010. For the reservoirs or the period (April-June 2010) capacity 86.87%. The operator states that they were in better condition last year when compared to 2009 (101.01%) for the same period. This can be attributed to the berm break at Lake I. Still purchasing water from Portsmouth per their contract, no drought measure taken to date.	62,562
3810900	Virginia Beach	Norfolk	V	W - 07/19/10 - Obtains water from Norfolk. Called for voluntary conservation on 9/19/07.	423,743
3830850	Williamsburg	Waller Mill Reservoir	N	7/20/2010: 2" above primary spillway - about 92% of usable capacity. 372 days of usable storage based on drawdown rate of the past week of 2.25".	16,400
4041035	APPOMATTOX RIVER WATER AUTHORITY	Surface water; Lake Chesdin	V	S - Wholesaler to Chesterfield County, Prince George County, Dinwiddie County; Cities of Petersburg and Colonial Heights. Reservoir is at 31" below top of dam. Voluntary restrictions has begun.	200,000

4041845	CHESTERFIELD CO CENTRAL WATER SYSTEM	Surface water; Swift Creek reservoir; purchases finished water	V	S- Purchases water from the City of Richmond and the Appomattox River Water Authority. Swift Creek Reservoir is at 0.9 feet below top of dam. Voluntary restrictions have begun.	286,000
4057800	TAPPAHANNOCK, TOWN OF	Groundwater wells	N	S	2,100
4073311	GLOUCESTER CO WATER TREATMENT PLT	Surface water, Beaverdam reservoir; 2 deep groundwater wells	N	S-Reservoir is full.	8,870
4075283	EASTERN GOOCHLAND CENTRAL WATER SYSTEM	Purchased surface water	N	S-purchases water from Henrico County	2,500
4075735	JAMES RIVER CORRECTIONAL CTR	Surface water; James River	N	S- Conservation at all DOC facilities	9,300
4085398	HANOVER SUBURBAN WATER SYSTEM	Surface water; North Anna River; some groundwater wells; purchases finished water	N	S (see Richmond)	71,000
4085770	SPRING MEADOWS- MEADOW GATE	Groundwater wells	N	S	2,300
4087125	HENRICO COUNTY WATER SYSTEM	Surface water; James River	N	S (see Richmond)	289,000
4101900	WEST POINT, TOWN OF	Groundwater wells	N	S	3,000
4127110	DELMARVA PROPERTIES	Groundwater wells	N	S-New Kent Co. encourages conservation at all county owned waterworks.	7,700
4145675	POWHATAN COURTHOUSE	Groundwater wells	N	S	2,600
4193280	COLONIAL BEACH, TOWN OF	Groundwater wells	N	S	3,300
4760100	RICHMOND, CITY OF	Surface water; James River	N	S- water levels do not affect intake; James River Regional Flow Management Plan set restrictions based on James River level for counties of Henrico, Chesterfield, Goochland, and Hanover counties, which purchase water from the City. Voluntary restrictions not yet necessary, but may become necessary if	197,000

				no substantive rainfall events.	
5143210	Town of Gretna	Georges Creek Res	N	S	2,500
5029085	Buckingham County	Troublesome Creek Reservoir	N	S	5,751
5037300	Town of Keysville	Keysville Reservoir	N	S	800
5780600	HCSA-South Boston	Dan River	N	S	11,388
5141640	Town of Stuart	South Mayo River	N	S	1,500
5147170	Town of Farmville	Appomattox River	N	S	7,011
5011050	Town of Appomattox	Wells	V	S	1,708
5067265	Hales Point	Wells	N	S - hauling water	46
5690400	City of Martinsville	Beaver Creek Reservoir	N	B - reservoir now overflowing	16,000
6033085	Caroline Utility	Groundwater	M	S - 7/13/2010 Mandatory water use restriction of High-Level 3. Last update 7/15/2010.	3600 primary 3000 consec
6061200	Marshall	Groundwater	M	S - The WSA Alert Messaging Service maintains the Water Use Restriction Notice as of 7/21/2010. The mandatory water use restriction is not directly drought related but depends on water source development.	2,134
6107150	Town of Hamilton	Groundwater	V	S - 7/21/10 Voluntary water use restrictions initiated 7/6/2010	2,000
6107400	Town of Lovettsville	Groundwater	V	S - 7/21/10 Voluntary water use restrictions remain in place; however there is no problem with water supply.	1,280
6107600	Town of Purcellville	Surfice water/groundwater	V	B - 7/21/10 All sources returned to service. Voluntary water conservation initiated 7/2/10.	6,300
6107650	Town of Round Hill	Groundwater	V	S - 7/21/10 - No water supply problems. Voluntary water use restrictions effective 7/6/10.	3,156

*Rows in yellow are additions from the 7/6/10 report.